# Permit Fact Sheet

Changes from the previous permit fact sheet are highlighted in grey.

## General Information

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permit Number: | **WI-0020001-10-2** | | | | | | | | | | | |
| Permittee Name: | **Whitewater Wastewater Treatment Plant** | | | | | | | | | | | |
| Address: | 312 W Whitewater PO Box 178<br>Whitewater WI 53190-3002 | | | | | | | | | | | |
| Discharge Location: | SW ¼ of NW ¼ of Section 33, T5N-R15E<br>Lat/Long: 42.85 ºN 88.74 ºW<br>Highway 'U', Whitewater, Wisconsin | | | | | | | | | | | |
| Receiving Water: | Whitewater Creek (Whitewater Creek Watershed, LR14 - Lower Rock River Basin) in Jefferson County | | | | | | | | | | | |
| StreamFlow ($Q_{7,10}$): | Annual 7Q10 of the Whitewater Creek is 13 cfs | | | | | | | | | | | |
| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sep | Oct | Nov | Dec |
| | 15 | 16 | 18 | 20 | 17 | 15 | 14 | 14 | 14 | 15 | 16 | 16 |
| Stream Classification: | Warm Water Sport Fishery (WWSF) | | | | | | | | | | | |
| Design Flow(s) | Daily Maximum | 8.4 MGD | 2014 Facility Plan | | | | | | | | | |
| | Weekly Maximum | 5.2 MGD | | | | | | | | | | |
| | Monthly Maximum | 3.8 MGD | | | | | | | | | | |
| | Annual Average | 3.65 MGD | | | | | | | | | | |
| Significant Industrial Loading? | Generac Corp (generators) and Clinton Power | | | | | | | | | | | |
| Operator at Proper Grade? | Yes; Ben Mielke, Superintendent/OIC is certified in all required subclasses.<br>Plant requirements: Advanced – A1, B, C, D, P, L, and SS. | | | | | | | | | | | |

## Facility Description

The City of Whitewater serves a population of approximately 14,500 people as well as several significant industries (see list above). The WWTP is designed to treat an annual flow of 3.65 MGD. The wastewater treatment plant consists of preliminary (bar screen, grit removal and cleaning) treatment, primary clarification, secondary treatment (RBCs), chemical phosphorus treatment, secondary clarification, tertiary filtration (deep bed anthracite), and UV disinfection prior to discharge to the Whitewater Creek. Biosolids are treated with anaerobic digestion, stored as a liquid and land applied on approved sites. Currently the Whitewater WWTP is treating approximately 1.35 MGD and generating 150 metric tons of biosolids on an annual basis.

The Whitewater WWTP underwent a facility upgrade to replace the RBCs with a suspended growth activated sludge system complete in May 2018. The facility completed a transformation from an RBC secondary treatment facility to activated sludge with bio-P. One of the old secondary clarifiers was re-purposed as additional aeration capacity to be used as necessary. In addition, two new secondary clarifiers with Towbro headers were installed. These modifications have

resulted in lower T-Phos and TSS effluent concentrations. Alternatively, solids production and scrutiny on solids processing has increased.

The upgraded facility includes a change to the current in plant diversion which allows for partial secondary treatment. At Peak Hour Flows of 11 MGD, primary effluent is conveyed through the secondary biological treatment process via a step feed process. Flow is diverted past the selector basins and 3 MGD is sent to aeration basins #1 and #2, 3 MGD is sent to aeration basins #3 and #4 and 4 MGD is sent to aeration basin #5. Flow is then combined to go through secondary clarification, but split again prior to filtration. At Peak Hour Flows of 11 MGD, approximately 6 MGD will be automatically diverted around filtration and go directly to disinfection and 5 MGD still going through the filtration process. All flow will combine and go through disinfection and ultimately out the designated outfall. When flow is directed around the filters the permittee reports flow and time at Outfall 104.

Prior to entering the receiving water, the effluent from the City's treatment system is combined with the effluent from Whitewater Generating Station (formerly LSP Whitewater Limited Partnership) (WPDES Permit No. WI – 0049069), a fuel oil and natural gas power station. Effluent limitations have been developed for the combined discharge that protects the receiving water quality. The collection system for the City of Whitewater is a separate sewer system with no constructed overflow points. The City is also covered under a "no exposure certification" for storm water.

# Substantial Compliance Determination

**Enforcement During Last Permit:** In the last permit term the facility had one SSO and one TFO. No other enforcement actions were taken. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit documented in the 11/30/2021 inspection report, this facility has been found to be in substantial compliance with their current permit.

| **Sample Point Designation** | | |
|---|---|---|
| **Sample Point Number** | **Discharge Flow, Units, and Averaging Period** | **Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)** |
| 701 | 1.30 MGD (2020-2021) | Influent: 24-hour flow proportional composite sampler intake located in the Preliminary Treatment Building and includes sidestream flows (sludge decant and filter backwash). |
| 001 | 1.31 MGD (2020-2021) | Effluent: 24-hour flow proportional composite sampler intake located in the post aeration tank. Grab sample also collected at the same location. |
| 002 | 159 dry US Ton (Application) | Anaerobically digested, Liquid, Class B. All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test. The sample point is the Sludge Storage Tank after mixing. |
| 006 | N/A | Combined effluent: 24-hour time proportional composite sampler located at a representative location of the combined Whitewater Generating Station and City of Whitewater effluent. Both facilities are responsible for conducting the acute and chronic WET monitoring requirements on the combined discharge and may share costs and efforts to that end. The same WET tests may be used to meet WET testing requirements. Shared WET results shall be |

| Sample Point Designation | | |
|---|---|---|
| **Sample Point Number** | **Discharge Flow, Units, and Averaging Period** | **Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)** |
| | | entered on both facilities' DMRs. |
| 102 | N/A | Mercury field blanks shall be collected using standard sample. handling procedures. |
| 104 | Outfall activated – was in use in the past | In-Plant Diversion OTHER BYPASS: Sample point for reported diverted flow which bypasses the filters prior to disinfection. |

# 1 Influent - Proposed Monitoring

## Sample Point Number: 701- INFLUENT PLANT

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Flow Rate | | MGD | Daily | Continuous | |
| BOD5, Total | | mg/L | 3/Week | 24-Hr Flow Prop Comp | |
| Suspended Solids, Total | | mg/L | 3/Week | 24-Hr Flow Prop Comp | |
| Mercury, Total Recoverable | | ng/L | Quarterly | 24-Hr Flow Prop Comp | |

## Changes from Previous Permit:

Influent monitoring requirements were evaluated for the proposed permit term and sampling frequency for BOD and TSS was found to be below the standard minimum sampling frequency for a facility of this size. Therefore, the department determined that no change in sampling frequency is warranted.

## Explanation of Limits and Monitoring Requirements

**$BOD_5$ and Total Suspended Solids:** Tracking of $BOD_5$ and Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code and in the Standard Requirements section of the permit. Taking into consideration guidance and requirements in administrative code, influent monitoring frequencies for Whitewater's permit were determined to not be appropriate for pollutants that have final effluent limits in effect during this permit term therefore the sampling frequency has been increased to the minimum standard frequency.

**Mercury**: Mercury monitoring frequency was determined to be appropriate, meeting the data quality requirements in ss. NR 106.145(9) and (10), Wis. Adm. Code. This monitoring frequency is consistent with the mercury field blank and effluent sample frequencies contained in this permit. Influent sampling frequency is based upon size of facility.

# 2 Inplant - Proposed Monitoring and Limitations

## Sample Point Number: 102- Mercury Field Blanks

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Mercury, Total Recoverable | | ng/L | Quarterly | Grab | |

## Changes from Previous Permit:

InPlant sampling requirements were evaluated for the proposed permit term and no changes are needed from the previous permit.

## Explanation of Limits and Monitoring Requirements

Mercury field blank analysis was evaluated and found to provide adequate representative results meeting the data quality requirements in ss. NR 106.145(9) and (10), Wis. Adm. Code

## Sample Point Number: 104- OTHER BYPASS

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Flow Rate | | MGD | Per Occurrence | Continuous | Start flow measurement at the commencement of bypass operations. Measure flow in daily increments until operation ends and report daily bypass flow of the eDMR. See “Other Bypass Requirements” permit section. |
| Time | | hours | Per Occurrence | Calculated | Report the total duration of ‘Other Bypass’ within a given day (12:00am - 11:59pm) in which the other bypass occurs. See “Other Bypass Requirements” permit section. |

## Changes from Previous Permit:

Sample Point 104 included as an active outfall for when flow goes around the filters as an ‘other bypass’.

## Explanation of Limits and Monitoring Requirements

The department has determined that an ‘other bypass’ as defined in s. NR 205.07(1)(u)3., Wis. Adm. Code, may occur at this sewage treatment facility. Furthermore, the department has previously approved plans in accordance with s. 281.41,

Wis. Stats., for the partial bypass around the tertiary treatment process prior to disinfection. Outfall 104 is for reporting when flow goes around the filters.

# 3 Surface Water - Proposed Monitoring and Limitations

## Sample Point Number: 001- EFFLUENT

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Flow Rate | | MGD | Daily | Continuous | |
| BOD5, Total | Weekly Avg | 10 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| BOD5, Total | Weekly Avg | 20 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| BOD5, Total | Monthly Avg | 10 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| BOD5, Total | Monthly Avg | 20 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| BOD5, Total | Weekly Avg | 304 lbs/day | 3/Week | Calculated | May through October |
| BOD5, Total | Weekly Avg | 609 lbs/day | 3/Week | Calculated | November through April |
| Suspended Solids, Total | Weekly Avg | 10 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| Suspended Solids, Total | Weekly Avg | 20 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| Suspended Solids, Total | Monthly Avg | 10 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| Suspended Solids, Total | Monthly Avg | 20 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| Suspended Solids, Total | Weekly Avg | 394 lbs/day | 3/Week | Calculated | January, March, and December |
| Suspended Solids, Total | Weekly Avg | 434 lbs/day | 3/Week | Calculated | February |
| Suspended Solids, Total | Weekly Avg | 411 lbs/day | 3/Week | Calculated | April and November |
| Suspended Solids, Total | Weekly Avg | 304 lbs/day | 3/Week | Calculated | May through October |
| Suspended Solids, Total | Monthly Avg | 280 lbs/day | 3/Week | Calculated | January, March, May, October, and December |
| Suspended Solids, Total | Monthly Avg | 308 lbs/day | 3/Week | Calculated | February |

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Suspended Solids, Total | Monthly Avg | 291 lbs/day | 3/Week | Calculated | April, June, and November |
| Suspended Solids, Total | Monthly Avg | 251 lbs/day | 3/Week | Calculated | July |
| Suspended Solids, Total | Monthly Avg | 274 lbs/day | 3/Week | Calculated | August |
| Suspended Solids, Total | Monthly Avg | 285 lbs/day | 3/Week | Calculated | September |
| Nitrogen, Ammonia (NH3-N) Total | Daily Max | 16.8 mg/L | 3/Week | 24-Hr Flow Prop Comp | Effective year round |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 10.5 mg/L | 3/Week | 24-Hr Flow Prop Comp | January |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 10.6 mg/L | 3/Week | 24-Hr Flow Prop Comp | February and December |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 11.3 mg/L | 3/Week | 24-Hr Flow Prop Comp | March |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 9.8 mg/L | 3/Week | 24-Hr Flow Prop Comp | April |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 9.2 mg/L | 3/Week | 24-Hr Flow Prop Comp | May |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 6.3 mg/L | 3/Week | 24-Hr Flow Prop Comp | June through September |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 9.6 mg/L | 3/Week | 24-Hr Flow Prop Comp | October |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 10.7 mg/L | 3/Week | 24-Hr Flow Prop Comp | November |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.4 mg/L | 3/Week | 24-Hr Flow Prop Comp | January, February, and December |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.8 mg/L | 3/Week | 24-Hr Flow Prop Comp | March |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.3 mg/L | 3/Week | 24-Hr Flow Prop Comp | April |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.0 mg/L | 3/Week | 24-Hr Flow Prop Comp | May |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 3.2 mg/L | 3/Week | 24-Hr Flow Prop Comp | June |

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 3.0 mg/L | 3/Week | 24-Hr Flow Prop Comp | July, August, and September |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.1 mg/L | 3/Week | 24-Hr Flow Prop Comp | October |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 4.5 mg/L | 3/Week | 24-Hr Flow Prop Comp | November |
| pH Field | Daily Max | 9.0 su | Daily | Grab | |
| pH Field | Daily Min | 6.0 su | Daily | Grab | |
| Dissolved Oxygen | Daily Min | 6.0 mg/L | Daily | Grab | |
| E. coli | Geometric Mean - Monthly | 126 #/100 ml | 2/Week | Grab | Limit Effective May through September annually. |
| E. coli | % Exceedance | 10 Percent | Monthly | Calculated | Limit Effective May through September annually. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month. |
| Phosphorus, Total | Monthly Avg | 0.4 mg/L | 3/Week | 24-Hr Flow Prop Comp | This is an interim MDV limit. See the MDV/Phosphorus sections and phosphorus schedules. |
| Phosphorus, Total | | lbs/month | Monthly | Calculated | Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month. |
| Phosphorus, Total | | lbs/yr | Annual | Calculated | Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form. |
| Mercury, Total Recoverable | | ng/L | Quarterly | Grab | |
| Nitrogen, Total Kjeldahl | | mg/L | Quarterly | 24-Hr Flow Prop Comp | |

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Nitrogen, Nitrite + Nitrate Total | | mg/L | Quarterly | 24-Hr Flow Prop Comp | |
| Nitrogen, Total | | mg/L | Quarterly | Calculated | Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen. |
| Chloride | | mg/L | Monthly | 24-Hr Flow Prop Comp | Monitoring only in 2026 |
| Temperature Maximum | | deg F | Continuous | Continuous | Monitoring only in 2026 |
| PFOS | | ng/L | Quarterly | Grab | Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule. |
| PFOA | | ng/L | Quarterly | Grab | Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule. |

## Changes from Previous Permit

Effluent limitations and monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit;

**Fecal Coliform and E. coli:** Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits. E. coli monitoring and limits become effective on May 1, 2022. E. coli limits of 126 #/100ml as a monthly geometric mean that may never be exceeded, and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month, will apply.

**Phosphorus:** The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 0.40 mg/L effective at reissuance. The permittee is now required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By May 1 annually the permittee shall submit an annual watershed report.

**Chloride and Temperature:** Monitoring added in the fourth year of the proposed permit.

**PFOS and PFOA**: ~~Monitoring added once every two months in the permit in accordance with s. NR 106.98(2)(b), Wis. Adm. Code.~~ The monitoring frequency for PFOS and PFOA has been reduced from 1/ 2 Months to Quarterly.

**Copper:** Copper sampling for once per permit term was removed as it was no longer found to be required.

## Explanation of Limits and Monitoring Requirements

**Water Quality Based Limits and WET Requirements and Disinfection (if applicable)**

Refer to the "Water Quality-Based Effluent Limitations for the City of Whitewater", prepared by Sarah Luck, dated April 20, 2022 and used for this reissuance.

**BOD, DO, and pH:** Monitoring and limits for these pollutants correspond to the requirements of the current permit since the facility has not increased the capacity of the wastewater system since the last permit issuance, nor are increases expected during the term of the proposed permit.

**Fecal Coliform:** Fecal Coliform monitoring and limits have been removed and replaced with *E. coli* monitoring and limitations. The permittee has indicated that the facility is able to immediately meet *E. coli* limits.

***E. Coli*:** On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Code, became effective and replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreation uses. Since the facility is required to disinfect the following limits are included in the proposed permit in accordance with s. NR 210.06(2)(a)1, Wis. Adm. Code. The existing fecal coliform limit of 400 #/100 ml as a monthly geometric mean is replaced with *E. coli* limit of 126 #/100 ml as a monthly geometric mean and no more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. The permittee indicated to the department that the permittee will be in compliance with *E. coli* limits immediately.

**Mercury:** Evaluation of effluent mercury data submitted by Whitewater indicates that the level in the effluent does not exceed the water quality-based effluent limit of 1.3 ng/L, so a limit is not needed. Quarterly monitoring has been retained in the permit.

**Ammonia** – Water quality-based effluent limitations are evaluated for Ammonia Nitrogen based upon water quality criteria in ch. NR 105 (as revised in March, 2004), including acute toxicity criteria (ATC) and chronic toxicity criteria (CTC). Effluent limitations for ammonia are calculated using the procedures in s. NR 106.32, Wis. Adm. Code and are shown in the WQBEL dated 7/18/2016.

**Chloride:** Effluent concentrations (P99s) were below the calculated acute & chronic limitations, so a limit is not needed (WQBEL). The permit requires monitoring in the fourth year that will be used for the next reissuance process.

**Temperature -** On October 1, 2010, revisions to chs. NR 102 and 106, Wis. Adm. Code, took effect. Details can be found at: http://dnr.wi.gov/topic/SurfaceWater/thermal.html. These revisions establish the criteria needed to calculate thermal limits. Whitewater supplied the Department with enough effluent data to evaluate the reasonable potential for limits. No calculated effluent limit had the reasonable potential to be exceeded and therefore no effluent limits are being placed in the permit. However, monitoring during the fourth year of the permit is included which will be used for the next reissuance process.

**Nitrogen Series –** All major municipalities that discharge to the Mississippi River Basin are now required to perform quarterly monitoring.

**TMDL –** A total maximum daily load (TMDL) was developed for the Rock River Basin to determine the maximum amounts of phosphorus and sediment that can be discharged to protect and improve water quality. The Rock River Basin's TMDL was approved by the Environmental Protection Agency (EPA) in September 2011. These final effluent limits were derived from and comply with the applicable water quality criterion and are consistent with the assumptions and requirements of the EPA-approved wasteload allocation (WLA) for the Rock River. The entire report can be found at: http://dnr.wi.gov/topic/TMDLs/RockRiver/Final_Rock_River_TMDL_Report_with_Tables.pdf.

**Phosphorus** - Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) with Watershed Plan for compliance for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on February 6, 2017 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The interim effluent limit for total phosphorus is 0.40 mg/L as a monthly average limit.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and implement a plan that is designed to result in annual phosphorus reductions from other sources in the basin based on the pounds of phosphorus discharged during the previous year in excess of the specified target value. A reopener clause is included in the permit to address the current MDV's expiration date, as a permit action may be required to update or remove variance provisions if the MDV is altered or unavailable after February 6, 2027.

The approved total phosphorus TMDL mass limits for this permittee are included in the following table below:

| Month | Monthly Average Total P Effluent Limit (lbs/day) |
|---|---|
| Jan | 8.84 |
| Feb | 11.7 |
| March | 11.7 |
| April | 12.0 |
| May | 11.7 |
| June | 11.6 |
| July | 9.20 |
| Aug | 7.80 |
| Sept | 6.60 |
| Oct | 7.24 |
| Nov | 7.33 |
| Dec | 8.38 |

**Total Suspended Solids** - Weekly average and monthly average mass limits for total suspended solids were required to comply with the Rock River TMDL and were derived consistent with the assumptions and requirements of the EPA-approved WLA for the Rock River. There are no changes proposed in concentration limits. These limits are in addition to the concentration limits for suspended solids of 10 mg/L and 20 mg/L. The approved total suspended solids TMDL limits for this permittee are included in the following table**:**

| Month | Monthly Ave TSS Effluent Limit (lbs/day) | Weekly Ave TSS Effluent Limit (lbs/day) |
|---|---|---|
| Jan | 280 | 394 |
| Feb | 308 | 434 |
| March | 280 | 394 |
| April | 291 | 411 |
| May | 280 | 394* |
| June | 291 | 411* |

| Month | Monthly Ave TSS Effluent Limit (lbs/day) | Weekly Ave TSS Effluent Limit (lbs/day) |
|---|---|---|
| July | 251 | 354* |
| Aug | 274 | 387* |
| Sept | 285 | 402* |
| Oct | 280 | 394* |
| Nov | 291 | 411 |
| Dec | 280 | 394 |

***** Existing limit of 304 lbs/day remains

**PFOS and PFOA** – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for major municipal dischargers with an average flow rate greater than 1 MGD but less than 5 MGD, at a minimum sample effluent once every two-months for PFOS and PFOA pursuant s. NR 106.98(2)(b), Wis. Adm. Code. The initial determination of the need for sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling.

After a review of the data submitted with the Year 2 Report on Effluent Discharges, the department has determined that it is warranted to reduce the sampling frequency in this case. The department is requiring continued monitoring of these compounds to complete the permit term to ensure that the current effluent quality is maintained. At the next permit reissuance, the department will make another determination as to whether further reduction or removal of monitoring is warranted, based on the continued sampling results.

**Toxics** – No waste stream changes - sludge metals all below High Quality values therefore no additional metals sampling is warranted.

**Disinfection** – UV disinfection.

**Municipal Effluent Limits** – In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. No new limits were required.

**Monitoring Frequency -** The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term was set below the standard minimum frequency for a major municipal facility of this size. However, after review of the operations in the last year and lack of compliance issues, the department determined to maintain the current sample frequency.

## Sample Point Number: 006- WG Station & Whitewater Combined WW

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Acute WET | | TUa | See Listed Qtr(s) | 24-Hr Comp | See WET section |
| Chronic WET | Monthly Avg | 1.5 TUc | See Listed Qtr(s) | 24-Hr Comp | |

## Changes from Previous Permit

The required testing quarters was updated. A chronic limit has been included.

## Explanation of Limits and Monitoring Requirements

**Water Quality Based Limits and WET Requirements and Disinfection (if applicable)**

Refer to the "Water Quality-Based Effluent Limitations for the City of Whitewater", prepared by Sarah Luck, dated April 20, 2022 and used for this reissuance.

**Whole Effluent Toxicity (WET) -** The previous permit term required annual acute and chronic WET tests. Annual acute and chronic WET tests will be included in the next permit however a chronic monthly average WET limit has been included. WET tests will continue to be conducted on the combined effluent to ensure that samples used in WET tests are representative of the effluent entering the receiving water. Both facilities will have permits that hold them responsible for conducting the acute and chronic WET monitoring required on the combined discharge and they may share the costs and efforts to that end. The same WET test(s) may be used to meet the WET testing requirements of both permits. Shared WET results shall be entered on both facilities' DMRs, but only one WET Test Report Form needs to be submitted for each test. The Department's WET Guidance Document was followed when determining the appropriate test frequencies. If toxicity reduction evaluation (TRE) activities are required due to WET test failures (as described in section 6.4.10 of the permit), both permittees should work cooperatively to find and fix the source of toxicity in their combined effluents.

# 4 Land Application - Proposed Monitoring and Limitations

| Municipal Sludge Description | | | | | | |
|---|---|---|---|---|---|---|
| **Sample Point** | **Sludge Class (A or B)** | **Sludge Type (Liquid or Cake)** | **Pathogen Reduction Method** | **Vector Attraction Method** | **Reuse Option** | **Amount Reused/Disposed (Dry Tons/Year)** |
| 002 | B | Liquid | Fecal Coliform | Injection & VSR | Land Apply | 150 Dry Tons |
| Does sludge management demonstrate compliance? **Yes** | | | | | | |
| Is additional sludge storage required? **No** | | | | | | |
| Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **Yes**<br><br>If yes, special monitoring and recycling conditions will be included in the permit to track any potential | | | | | | |

| Municipal Sludge Description | | | | | | |
|---|---|---|---|---|---|---|
| **Sample Point** | **Sludge Class (A or B)** | **Sludge Type (Liquid or Cake)** | **Pathogen Reduction Method** | **Vector Attraction Method** | **Reuse Option** | **Amount Reused/Disposed (Dry Tons/Year)** |
| problems in landapplying sludge from this facility | | | | | | |
| Is a priority pollutant scan required? **No**<br><br>Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD. | | | | | | |

## Sample Point Number: 002- Liquid Sludge

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Solids, Total | | Percent | Annual | Composite | |
| Arsenic Dry Wt | Ceiling | 75 mg/kg | Annual | Composite | |
| Arsenic Dry Wt | High Quality | 41 mg/kg | Annual | Composite | |
| Cadmium Dry Wt | Ceiling | 85 mg/kg | Annual | Composite | |
| Cadmium Dry Wt | High Quality | 39 mg/kg | Annual | Composite | |
| Copper Dry Wt | Ceiling | 4,300 mg/kg | Annual | Composite | |
| Copper Dry Wt | High Quality | 1,500 mg/kg | Annual | Composite | |
| Lead Dry Wt | Ceiling | 840 mg/kg | Annual | Composite | |
| Lead Dry Wt | High Quality | 300 mg/kg | Annual | Composite | |
| Mercury Dry Wt | Ceiling | 57 mg/kg | Annual | Composite | |
| Mercury Dry Wt | High Quality | 17 mg/kg | Annual | Composite | |
| Molybdenum Dry Wt | Ceiling | 75 mg/kg | Annual | Composite | |
| Nickel Dry Wt | Ceiling | 420 mg/kg | Annual | Composite | |
| Nickel Dry Wt | High Quality | 420 mg/kg | Annual | Composite | |
| Selenium Dry Wt | Ceiling | 100 mg/kg | Annual | Composite | |
| Selenium Dry Wt | High Quality | 100 mg/kg | Annual | Composite | |
| Zinc Dry Wt | Ceiling | 7,500 mg/kg | Annual | Composite | |
| Zinc Dry Wt | High Quality | 2,800 mg/kg | Annual | Composite | |
| Nitrogen, Total Kjeldahl | | Percent | Annual | Composite | |

| Monitoring Requirements and Limitations | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Limit Type** | **Limit and Units** | **Sample Frequency** | **Sample Type** | **Notes** |
| Nitrogen, Ammonium (NH4-N) Total | | Percent | Annual | Composite | |
| Phosphorus, Total | | Percent | Annual | Composite | |
| Phosphorus, Water Extractable | | % of Tot P | Annual | Composite | |
| Potassium, Total Recoverable | | Percent | Annual | Composite | |
| Radium 226 Dry Wt | | pCi/g | Annual | Composite | |
| PCB Total Dry Wt | Ceiling | 50 mg/kg | Once | Composite | Once in 2024 |
| PCB Total Dry Wt | High Quality | 10 mg/kg | Once | Composite | Once in 2024 |

## Changes from Previous Permit:

No changes from previous permit in parameters. Sample type updated to Composite to reflect sampling method currently used since multiple grab samples are taken and then combined for testing.

## Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements. The language for PCB monitoring has been updated to reflect recent revisions to the analytical methods and clean-up procedures specified in NR 219, Wis. Adm. Code. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code. Radium requirements are addressed in s. NR 204.07(3)(n), Wis. Adm. Code.

# 5 Schedules

## 5.1 Phosphorus Schedule - Continued Optimization

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

| Required Action | Due Date |
|---|---|
| **Optimization:** The permittee shall continue to implement the optimization plan as previously approved to optimize performance to control phosphorus discharges. Submit a progress report on optimizing removal of phosphorus by the Due Date. | 01/01/2024 |
| **Progress Report #2:** Submit a progress report on optimizing removal of phosphorus. | 01/01/2025 |
| **Progress Report #3:** Submit a progress report on optimizing removal of phosphorus. | 01/01/2026 |
| **Progress Report #4:** Submit a progress report on optimizing removal of phosphorus. | 01/01/2027 |

**Explanation of Schedules**

Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with multi-discharger variance interim limits. This compliance schedule requires the permittee to continue to implement the optimization plan that was approved during the previous permit term.

## 5.2 Phosphorus Watershed Project Requirements

The permittee is required to submit annual watershed project reports in accordance with the following schedule.

| Required Action | Due Date |
|---|---|
| **Annual Watershed Report:** Submit an annual report by May 1 of each year that documents:<br>1) The calculated monthly discharge of phosphorus in lbs/month and the calculated monthly target value in lbs/month for the previous calendar year. See the calculation steps in the Surface Water section of this permit.<br>2) The calculated Annual Offset to be generated by the approved MDV Watershed Plan for the previous calendar year. See the calculation steps in the Surface Water section of this permit.<br>3) Verification that MDV Watershed Plan #MDV-2022-01 dated April 22, 2022 was implemented as approved and practices are operated and maintained consistent with the approved plan.<br>4) The pounds of phosphorus reduction achieved through the approved MDV Watershed Plan for the previous calendar year.<br>5) The source of the phosphorus reductions with a reference to the approved MDV Watershed Plan used to generate the offset.<br>6) Identification of any non-compliance or failure to implement the approved MDV Watershed Plan.<br>The first report is due by the specified Due Date. | 05/01/2024 |
| **Annual Watershed Report #2:** Submit an annual report (as described above) by May 1. | 05/01/2025 |
| **Annual Watershed Report #3:** Submit an annual report (as described above) by May 1. | 05/01/2026 |
| **Annual Watershed Report #4:** Submit an annual report (as described above) by May 1. | 05/01/2027 |
| **Agreement Modification:** If the required offset of phosphorus is not generated by the approved Watershed Plan in any year, the permittee shall propose a modification to the binding written agreement or seek alternative compliance or variance options allowed under state law.<br>Note: Failure to propose a modification to achieve compliance with the offset requirements may result in termination of the binding written agreement. | |
| **Annual Verification of Offset After Permit Expiration:** In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit annual reports to the Department including the information above by May 1 each year. | |
| **Continued Coverage:** If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharge Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats. | |

**Explanation of Schedule**

Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce non-point sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the "Watershed Project" watershed option described in s. 283.16(8m), Wis. Stats. Under this option the permittee shall implement a plan that is designed to result in annual reductions from other sources in the basin based on the pounds of phosphorus discharged during the previous year in excess of the specified target value. This schedule requires the permittee to submit annual reports to the Department indicating adherence to the approved watershed plan. The 'Watershed Plan' referenced throughout the permit is the approved MDV Watershed Plan.

## 5.3 PFOS/PFOA Minimization Plan Determination of Need

| Required Action | Due Date |
|---|---|
| **Report on Effluent Discharge:** Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code.<br><br>This report shall also include all PFOS and PFOA data that may be collected, including any influent, intake, in-plant, collection system sampling, and blank sample results. | 01/01/2024 |
| **Report on Effluent Discharge and Evaluation of Need:** Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan.<br><br>This report shall also include all PFOS and PFOA data that may be collected, including any influent, intake, in-plant, collection system sampling, and blank sample results.<br><br>The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.<br><br>If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued.<br><br>If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit. | 01/01/2025 |

**Explanation of Schedules**

As stated above, NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. S. NR 106.98, Wis. Adm. Code, specifies steps to generate data in order to determine the need for reducing PFOS and PFOA in the discharge. Data generated per the effluent monitoring requirements will be used to determine the need for developing a PFOS/PFOA minimization plan. As part of the schedule, the permittee is required to submit two annual Reports on Effluent Discharge.

If the Department determines that a minimization plan is needed, the permit will be modified or revoked/reissued to include additional requirements.

## 5.4 Land Application Management Plan

A management plan is required for the land application system.

| Required Action | Due Date |
|---|---|
| **Land Application Management Plan Submittal:** Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) | 01/01/2024 |

| | |
|---|---|
| address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. | |

**Explanation of Schedules**

The purpose of the land application management plan is to help optimize land spreading activities and ensure compliance with Wisconsin Administrative Code NR 204.

## Special Reporting Requirements

None

## Other Comments:

None

## Attachments:

~~Water Quality Based Effluent Limits with Maps – 4/20/2022~~

~~MDV Agreement – 5/13/2022 & 5/25/2022~~

~~MDV Conditional Approval – 4/14/2022~~

~~MDV Checklist – 5/9/2022~~

~~MDV Watershed Plan – 4/22/2022~~

~~Public Notice~~

PFOS and PFOA Water Quality-Based Effluent Limitations for the Whitewater Wastewater Treatment Facility - WPDES Permit No. (WI-0020001) in Jefferson County, by Amy Garbe, PE, Wastewater Engineer, dated December 19, 2024

## Proposed Expiration Date:

December 31, 2027

## Justification Of Any Waivers From Permit Application Requirements

None

**Prepared By:** Jennifer Jerich, Wastewater Specialist

**Date:** 9/15/2022

**Date post Fact Check:** 10/25/2022 updates made to sample frequency, *E. coli*, changing schedule dates to increase consistency, updated phosphorus interim limits, and update to the Standard Requirements section.
**Date post Public Notice:** 12/15/2022 updates made include typographical/clerical errors, formatting errors, corrections to the MDV language including the appropriate target limit as indicated in the MDV conditional approval (see Notice of Final Determination for more details)

**Revised By:** Sarah Donoughe, Wastewater Specialist-Adv

**Date:** December 19, 2024

# CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 19, 2024

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for the Whitewater Wastewater Treatment Facility -WPDES Permit No. (WI-0020001) in Jefferson County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for the Whitewater Wastewater Treatment Facility. The wastewater treatment plant discharges to Whitewater Creek after mixing with effluent from LSP Whitewater Limited Partnership (WPDES Permit No. WI-0049069) in the Whitewater Creek Watershed (LR14) in the Lower Rock River Basin.

The current permit, effective since February 2023, has monitoring only for PFOS and PFOA. The following review is based on new regulations which are now in effect throughout the state of Wisconsin and recommendations are made in accordance with chapters NR 102, 104, 105, 106, 207, and 217 of the Wisconsin Administrative Code, where applicable.

**Receiving Water Information**

- Name: Whitewater Creek
- Classification: Warm Water Sport Fish (WWSF) community, non-public water supply
- Flow: The following 7-Q10 and 7-Q2 values are provided by USGS for Whitewater Creek (USGS Station # 054270136) (letter from Rob Waschbusch, USGS, 08/15/2013).
  7-Q10 = 13.0 cfs (cubic feet per second)
  7-Q2 = 17.0 cfs
  Harmonic Mean Flow = 23.8 cfs using a drainage area of 43.3 $mi^2$
  The Harmonic Mean has been estimated based on average flow and the 7-Q10 using an equation from U.S. EPA's Technical Support Document for Water Quality-Based Toxics Control (March 1991, EPA/505/2-90-001, pgs. 88-89).
- % of Flow used to calculate limits: 25%

**Effluent Information**

- Flow: Average Design Flow = 3.98 MGD. Limits are calculated based on a combined effluent flow of 3.98 MGD due to sharing the discharge with LSP Whitewater (3.65 MGD + 0.328 MGD). For reference, the actual average flow from February 2023 to November 2024 was 1.38 MGD.
- Effluent characterization: This facility is categorized as a major municipality

The following table lists the statistics for effluent PFOS and PFOA levels from February 2023 through November 2024.

| | PFOS ng/L | PFOA ng/L |
|---|---|---|
| 1-day $P_{99}$ | 5.00 | 14.73 |
| 4-day $P_{99}$ | 3.84 | 11.19 |
| 30-day $P_{99}$ | 3.21 | 9.27 |
| Mean | 2.89 | 8.29 |
| Std | 0.73 | 2.21 |

| Sample Size | 12 | 12 |
|---|---|---|
| Range | 1.59-4.2 | 5.26-12 |

**Water Quality Based Limit – PFOS and PFOA**
Administrative rules for PFOS and PFOA took effect on August 1, 2022. These rule revisions include additions to ch. NR 102 (s. NR 102.05), Wis. Adm. Code, which establish PFOS and PFOA standards for surface waters. Revisions to ch. NR 106 (s. NR 106, Subchapter VIII), Wis. Adm. Code establish procedures for determining water quality based effluent limits for PFOS and PFOA, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

***PFOS***
Due to PFOS being a bioaccumulating compound of concern (BCC), no mixing zone is allowed pursuant s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criteria (8 ng/L).

***PFOA***
The conservation of mass equation is described in s. NR 106.06(4)(b)1. Wis. Adm. Code, and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream PFOA concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 95 ng/L for Whitewater Creek
Qs = 25% of the harmonic mean pursuant s. NR 106.06(4)(c)10., Wis. Adm. Code = 5.95 cfs
Cs = background concentration of PFOA in the receiving water pursuant to s. NR 106.06(4)(e), Wis. Adm. Code
Qe = effluent flow rate = 3.98 MGD = 6.16 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

After substituting the appropriate variables, the calculated PFOA limit is 186 ng/L.

**Reasonable Potential Determination**
In accordance with s. NR 106.98(4)(a), Wis. Adm. Code, **the discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS** because the 30-day $P_{99}$ of reported effluent PFOS data is less than the calculated WQBEL (8 ng/L). Therefore, **a WQBEL is not required.**

**The discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOA** because the 30-day $P_{99}$ of reported effluent PFOA data is less than the calculated WQBEL (186 ng/L). Therefore, **a WQBEL is not required.**

**Conclusions**
The discharge has no reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS nor PFOA. Therefore, no WQBELs are required.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling. **After a review of the available data, the department has determined that it is warranted to reduce the sampling frequency in this case to quarterly.**

If there are any questions or comments on these recommendations, please contact Amy Garbe by telephone at (608) 716-9968 or by email at Amy.Garbe@wisconsin.gov.

Attachments (2) – P99 Calculations

PREPARED BY: Amy Garbe date: 12/19/24

Amy Garbe, P.E., Wastewater Engineer

cc: Ashley Brechlin., Basin Engineer – SCR/Fitchburg
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS P99 Calculation

| EFFLUENT VARIABILITY ANALYSIS - | | | |
|---|---|---|---|
| = | = = | = | = |
| SUBSTANCE: | | | |
| NUMBER OF VALUES: | ------ | | |
| TOTAL | 12 | | |
| DETECTED | 12 | | |
| NON-DETECTED | 0 | | |
| d | 0 | | |
| m | 2.885 | | |
| mean of all data | 2.885 | | |
| s | 0.731145 | | |
| | ------ | ------ | ------ |
| n | 1 | 4 | 30 |
| d^n | 0 | 0 | 0 |
| p | 0.99 | 0.99 | 0.99 |
| Z_p | 2.326785 | 2.326785 | 2.326785 |
| 1+(s/m)^2 | 1.064227 | 1.064227 | 1.064227 |
| (sigma_d)^2 | 0.062248 | 0.062248 | 0.062248 |
| mu_d | 1.028401 | 1.028401 | 1.028401 |
| (sigma_dn)^2 | 0.062248 | 0.015929 | 0.002139 |
| mu_dn | 1.028401 | 1.05156 | 1.058456 |
| P_99 exponent | 1.608925 | 1.345225 | 1.166058 |
| | ------- | ------- | ------- |
| P_99 | 5.00 | 3.84 | 3.21 |
| | ------- | ------- | ------- |

| Data Summary | |
|---|---|
| Feb-23 | 2 |
| Apr-23 | 3.5 |
| May-23 | 2.9 |
| Jul-23 | 2.5 |
| Sep-23 | 1.59 |
| Nov-23 | 2.53 |
| Jan-24 | 3.2 |
| Mar-24 | 2.6 |
| May-24 | 4.2 |
| Jul-24 | 3.4 |
| Sep-24 | 2.6 |

Attachment 2 – PFOA P99 Calculation

| EFFLUENT VARIABILITY ANALYSIS - | | | | |
|---|---|---|---|---|
| = | = | = | = | |
| SUBSTANCE: | | | | |
| NUMBER OF VALUES: | ------ | | | |
| TOTAL | 12 | | | |
| DETECTED | 12 | | | |
| NON-DETECTED | 0 | | | |
| d | 0 | | | |
| m | 8.290833 | | | |
| mean of all data | 8.290833 | | | |
| s | 2.207744 | | | |
| | ------ | ------ | ------ | |
| n | 1 | 4 | 30 | |
| d^n | 0 | 0 | 0 | |
| p | 0.99 | 0.99 | 0.99 | |
| Z_p | 2.326785 | 2.326785 | 2.326785 | |
| 1+(s/m)^2 | 1.070909 | 1.070909 | 1.070909 | |
| (sigma_d)^2 | 0.068508 | 0.068508 | 0.068508 | |
| mu_d | 2.080897 | 2.080897 | 2.080897 | |
| (sigma_dn)^2 | 0.068508 | 0.017572 | 0.002361 | |
| mu_dn | 2.080897 | 2.106365 | 2.11397 | |
| P_99 exponent | 2.689909 | 2.414801 | 2.227025 | |
| | ------- | ------- | ------- | |
| P_99 | 14.73 | 11.19 | 9.27 | |
| | ------- | ------- | ------- | |

| Data Summary | |
|---|---|
| Feb-23 | 10 |
| Apr-23 | 7.9 |
| May-23 | 12 |
| Jul-23 | 11 |
| Sep-23 | 5.26 |
| Nov-23 | 8.73 |
| Jan-24 | 6.5 |
| Mar-24 | 5.6 |
| May-24 | 9.1 |
| Jul-24 | 6 |
| Sep-24 | 7.4 |